CLAIMS

1. A machine for grinding optical lenses, of the type comprising:
   - a grindstone set (21) mounted rotatably about a first axis (A-A');
   - a lens support (15) furnished with means (37) for rotating the lens (35) about a second axis (B-B') which, at least during grinding, is substantially parallel to said first axis (A-A');
   - means (13, 39) for relative axial and radial positioning of the lens support (15) relative to the grindstone set (21);
   - a tool-carrier assembly (17) comprising at least one tool (81; 83; 85) mounted integral with a tool-carrier shaft (75) rotatable about a third axis (C-C'), means (79) for actuating the tool-carrier shaft (75) suitable for moving the tool (81; 83; 85) between a retracted position and an active position in the vicinity of said second axis (B-B'), the third axis (C-C') having an inclination that can be varied relative to the second axis (B-B'),

   the tool-carrier assembly (17) also comprising means (79) for controlling, on a value dependent on the value of the curvature of the lens, the angle of inclination (α) of the third axis (C-C') relative to the second axis (B-B') when the tool (81; 83; 85) is distant from the lens (35),

   characterized in that the control means (79) are suitable for retracting the tool-carrier shaft (75) via the control of said angle of inclination (α).

2. The grinding machine as claimed in claim 1, characterized in that it comprises means (13, 39) for relative movement of the tool-carrier shaft (75) relative to the lens support (15) in

translation along the third axis (C-C') when the tool (81; 83; 85) is in the active position.

3. The grinding machine as claimed in claim 2, characterized in that said means (13, 39) for relative movement comprise means (13) for relative translation of the tool-carrier shaft (75) relative to the second axis (B-B') in a first direction, particularly in a direction parallel to the second axis (B-B'), means (53) for relative pseudo-translation of the tool-carrier shaft (75) relative to the second axis (B-B') in a second direction distinct from the first direction, particularly a direction perpendicular to the second axis (B-B'), and means (19) for synchronizing said translation and pseudo-translation means (39).

4. The grinding machine as claimed in one of claims 2 or 3, characterized in that the grindstone set (21) comprises a grindstone support (22) furnished with means (27, 29) for axial translation, and in that the tool-carrier assembly (17) is connected in translation to said grindstone support (22).

5. The grinding machine as claimed in one of claims 2 to 4, characterized in that the lens support (15) is furnished with radial pseudo-translation means (39).

6. The grinding machine as claimed in one of claims 1 to 5, characterized in that the tool-carrier assembly (17) is mounted rotatably on the grindstone support (22) about an axis (D-D') perpendicular to said first axis (A-A').

7. The grinding machine as claimed in any one of the preceding claims, characterized in that said control means (79) control the angle (α) of

inclination of the third axis (C-C') relative to the second axis (B-B') between 0 and 30° in the active position of said shaft (75).

8. The grinding machine as claimed in any one of the preceding claims, characterized in that said control means (79) are suitable for retracting said shaft (75) under the grindstone set (21) by moving it in front of the latter.

9. The grinding machine as claimed in any one of claims 1 to 8, characterized in that at least one tool is an additional back-beveling grindstone (81).

10. The grinding machine as claimed in any one of the preceding claims, characterized in that at least one tool is a grooving grindstone (83).

11. The grinding machine as claimed in any one of the preceding claims, characterized in that at least one tool is a drilling tool (85).

12. The grinding machine as claimed in one of claims 1 to 11, characterized in that it comprises means (13, 39) for relative movement of the tool-carrier shaft (75) relative to the lens support (15) in translation along the third axis (C-C') when the tool (81; 83; 85) is in the active position, and in that said relative movement means (13, 39) comprise means (13) for relative translation of the tool-carrier shaft (75) relative to the second axis (B-B') in a first direction, parallel to the second axis (B-B'), means for pseudo-translation of the lens support (15) relative to the second axis (B-B') in a second direction perpendicular to the second axis (B-B'), and means (19) for synchronizing said means of translation (13) and pseudo-translation (39).